H. ADAMS.

Shaking-Grates.

No. 153,797. Patented Aug. 4, 1874.

Fig. 1.

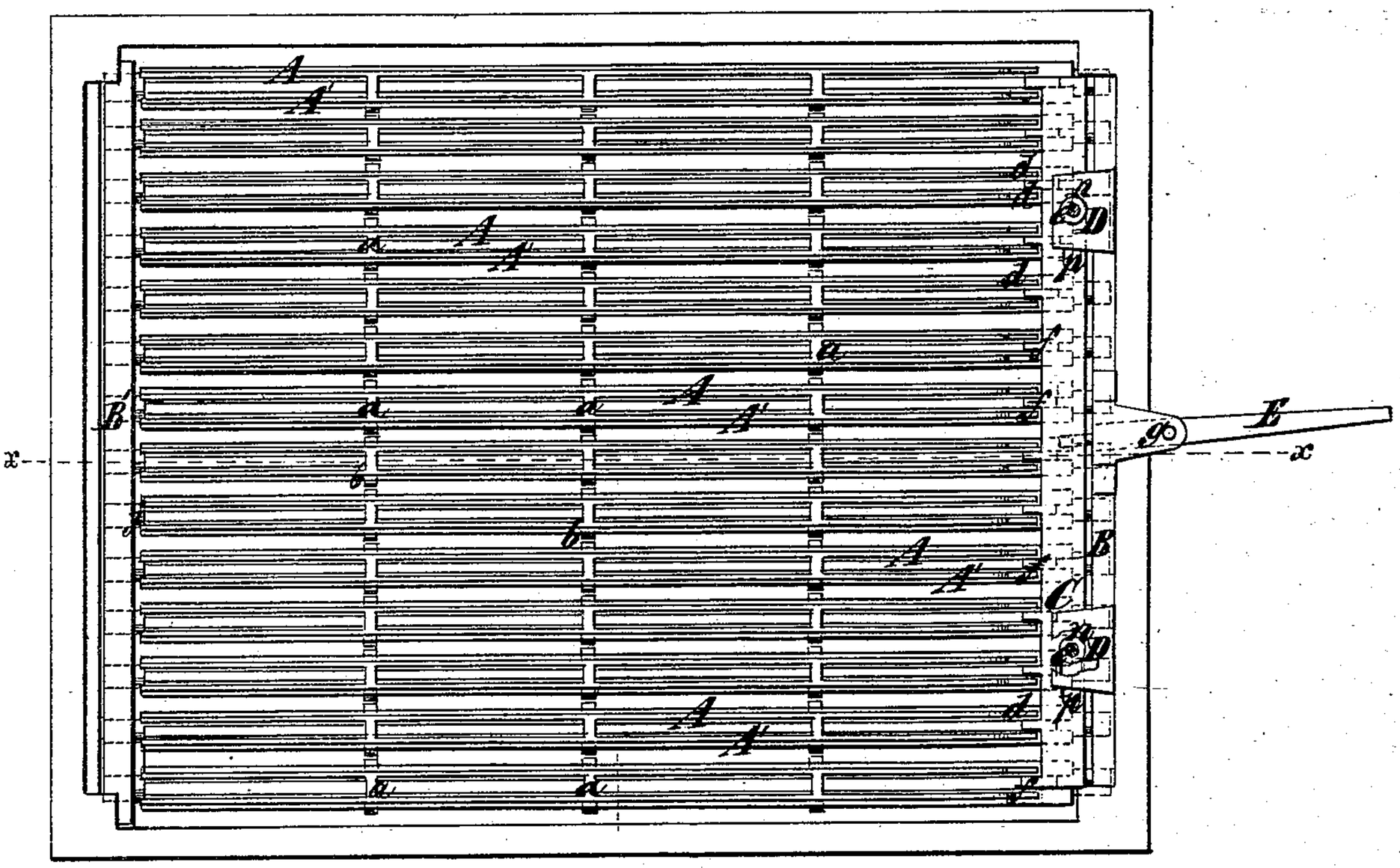


Fig. 2.

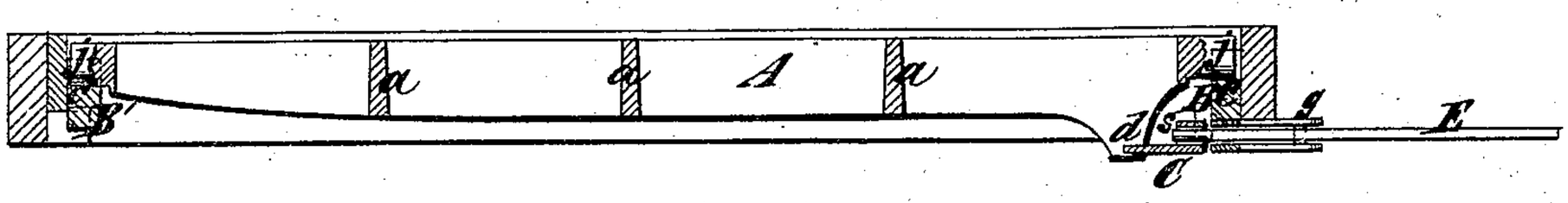
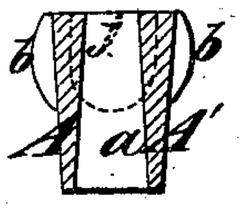


Fig 3.



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UNITED STATES PATENT OFFICE.

HAWLEY ADAMS, OF NEW YORK, N. Y.

IMPROVEMENT IN SHAKING-GRATES.

Specification forming part of Letters Patent No. **153,797**, dated August 4, 1874; application filed June 4, 1874.

To all whom it may concern:

Be it known that I, HAWLEY ADAMS, of the city of New York, in the county and State of New York, have invented a new and Improved Shaking-Grate; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

This invention relates to an improvement in that class of furnace-grates in which the bars are agitated or vibrated independently of the bearers or grate-frame; and the invention consists in the combination, with a series of bars, suitably journaled in the bearers, of a sliding reciprocating bar provided with projections, that fit loosely between the bars, and also provided with a shaking-lever, the said sliding bar being steadied in jaws or ways attached to or cast with the front bearer, the said jaws being provided with guides or friction-rollers, which work in slots formed in the said sliding bar, whereby I produce a durable and efficient shaking-grate for furnaces, &c., and one having the parts so arranged as to be the least liable to warp, and in which the shaking mechanism is not attached directly to the bars, and hence a bar which becomes bent or broken can be readily replaced without disturbing the others in the grate.

In the accompanying drawing, Figure 1 is an inverted plan of my improved shaking-grate. Fig. 2 is a longitudinal section of the same, taken on the plane of the dotted line *x x*, Fig. 1; and Fig. 3 is a cross-section of one of the double bars.

A A′ designate the grate-bars, which, in this instance, are cast in pairs, and connected by webs *a a*, each pair being provided with lugs or projections, *b b*, on their outer sides, which lugs are preferably shaped so as to prevent them from interfering with the free oscillation of the several pairs of bars, such pairs of bars being also provided at their ends with trunnious or journals *j j*, resting in suitable shaped recesses *c* in the bearers B B′. These bars are also provided with lugs or projections *d d* at or near their front ends. C designates the reciprocating bar, and it is supported in such manner that it can slide freely back aud forth opposite the lugs or projections *d d*. In the present instance this bar is arranged between two jaws, brackets, or supports, D D, wnich are preferably cast upon or with the front bearer B. The said bar C is provided with slots *p p*, (see Fig. 1,) and within these slots there are placed rollers *n n*, which are confined in place by pins *e e* passing through them as well as the sliding bar C. This bar C is provided with teeth or projections *f f*, one of which enters between the lugs *d d* of each pair of bars A A′, so that when the said bar C is moved back and forth longitudinally it will cant or vibrate the bars in a well-known manner. E is a lever, which, in the present instance, is used to operate the sliding bar C, and it is pivoted to the bearer B, preferably to a lug, *g*, thereon, the latter being cast with or secured to the said front bearer, and its inner end projects into a socket, *s*, provided in the bar C, and its outer end forms a handle by which to operate the grate-bars through the medium of said reciprocating bar C.

It will be understood from the foregoing description that this is an extremely durable and efficient shaking-grate, that the sliding bar C is not directly connected to the grate-bars, hence, if any one of the bars becomes warped or broken, it may be readily replaced without disturbing the others, and that the said sliding bar is protected from the excessive heat of the fire, and is not liable to warp.

Although I prefer to cast the grate-bars in pairs, as described, yet they may be cast separately, and in such case the number of teeth on the sliding bar C should be increased.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a series of bars, A A′, journaled in bearers and provided with projections *d d*, of the reciprocating shaking bar C, provided with projections *f f*, fitting loosely between the said bars A A′ and with slots *p p*, the bearers or jaws D D, and friction-rollers *n n*, substantially as and for the purpose herein set forth.

2. The combination, with the reciprocating bar C, front bearer B, and grate-bars A A′, of the pivoted shaking lever, E, substantially as herein specified.

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